

REMARKS

Introduction

Claims 1-56 are pending in this application. The Office Action dated 7-March-2006 has indicated claims 9, 20, and 21 allowable if rewritten in independent form. The Office Action has rejected claims 26-56 under 35 U.S.C. §112, and claims 1-8, 12-19, and 22-56 under §103(a) as unpatentable in view of U.S. Pat. No. 6,043,743 to Saito ("Saito"). The Office Action also has rejected claims 10-11 under §103(a) in view of Saito and U.S. Pat. Pub. No. 2004-000992 ("Cuddihy").

Comments: §112 rejections

Claims 26, 43, and 51 have been amended to address the concerns raised in the office action. The Assignee therefore respectfully requests withdrawal of the rejections to the claims under §112.

§103 rejections: Saito

Each of the independent claims and several of the dependent claims have been amended to focus the claims on a specific occupant sensing technique. The technique employs the product of load impacts determined based on electrode parameter readings with respect to unloaded electrode readings. In this regard, the independent claims closely track the features recited in the original claim 20 that was indicated as allowable if rewritten in independent form. The product of load impacts provides excellent insight into the occupant on the seat (Specification, pages 10-11, Figure 5).

In contrast, Saito uses four electrodes to obtain a pattern of sixteen load current / displacement voltage readings $R(i,j)$, where 'i' represents a transmission electrode, 'j' represents a reception electrode, $i=j$ represents transmission data, and $i > j$ represents reception data. The voltages and load current readings are used in a "calculating process" to determine whether the detected pattern matches an

expected pattern. (Saito, Col. 10, lines 49-64, Col. 12, lines 19-32, Figures 11-12). The Office Action, however, has not pointed to any portion of Saito which discloses the claimed analysis based on a product of load impacts.

Furthermore, the dependent claims recite additional distinguishing features. For example, claims 12-14 and 38-40 recite specific occupancy tests, several of which include forming the ratio of certain load readings (e.g., the ratio of a foot loading reading and a head loading reading (FL/HL)). The Office Action has not pointed to any disclosure in Saito that shows these specific tests. Instead, the Office Action broadly asserts that "it would have been obvious . . . that the controller determines the occupancy characteristics by applying an occupancy test for the purpose of classifying the occupancy characteristics." Even assuming that to be the case, the Office Action does not allege that Saito teaches or suggests the specific occupancy tests recited in claims 12-14 and 38-40, along or in combination with what "would have been obvious". As another example, with regard to claims 15 and 16, the Office Action has not identified in Saito obtaining an occupant age estimation or comparing against an age threshold after determining the presence of a child safety seat.

The Office Action asserts that features such as those in claims 12-16 and 38-40 are obvious in view of Saito, but provides no basis for the assertions. The Assignee therefore respectfully requests the Examiner to provide, in accordance with MPEP §2144.03 and 37 CFR 1.104(d)(2), an affidavit or declaration setting forth specific factual statements and explanations to support the Examiner's positions.

As additional examples, claims 19 and 21 recite the features of a "load impact sum" and a "load impact difference". As noted in the Specification:

Then, the controller 216 may determine a sum that represents the total load impact on both the head electrode 112 and the foot electrode 114. The load impact is the difference between the unloaded condition (e.g., no occupant), and measurements taken to determine a loaded condition (e.g., with occupant). Similarly, the controller 216 may also determine a difference that represents the difference in load impact between the head electrode 112 and the foot electrode 114.

(Specification, Page 10). Again, the Office Action does not point to any disclosure in Saito that teaches or suggests either type of load impact. As noted above, Saito obtains load current and displacement voltage readings from several combinations of electrodes in making an occupancy determination.

Therefore, Assignee respectfully requests withdrawal of the rejections of claims 1-8, 12-19, and 22-56.

§103 rejections: Saito & Cuddihy

Claims 10 and 11 recite electrodes separated by a vehicle cabin feature distance, such as a belt-buckle dimension. The Office Action points to Paragraph [0012] of Cuddihy as disclosing these features. Paragraph [0012], reproduced below, includes absolutely no indication that the electrodes are separated by a "vehicle cabin feature distance", let alone a "belt-buckle dimension":

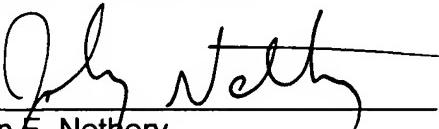
[0012] Restraints control module 18 is coupled to occupant sensors 30A, 30B, 30C, and 30D (collectively referred to as occupant sensors 30). Occupant sensors 30 may be one of a variety of types of occupant sensors including a weight-based sensor, an infrared, ultrasonic, or other types of sensors that sense the presence of a person within a seating position of the vehicle. Preferably, an occupant sensor is provided for each seating position. Occupant sensor 30A is positioned at the driver's seat. Occupant sensor 30B is positioned at the passenger front seat. Occupant sensors 30C and 30D are illustrated in the rear position. Although only two rear occupant sensors 30C and 30D are illustrated, various numbers of rear occupant sensors may be employed depending on the type of vehicle. For example, three occupant sensors may be provided across the rear seat. Also, several rows of seating positions and thus several rows of occupant sensors may be provided in the seats of full-size vans, mini-vans, sport utility vehicles, and station wagons. The occupant sensors generate an occupant sensor status signal that corresponds to the presence of an occupant in the various seating positions.

Instead, this paragraph notes that "an occupant sensor is provided for each seating position" and that there may be "several rows of seating positions and thus several rows of occupant sensors." Therefore, the Assignee respectfully requests withdrawal of the §103 rejection of claims 10-11 in view of Saito and Cuddihy.

Concluding Remarks

The Assignee respectfully requests withdrawal of the asserted rejections for the reasons given above. The Examiner is invited to contact the undersigned attorney for the Assignee by telephone if such communication would expedite the review and consideration of this application.

Respectfully submitted,



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